

ABSTRACT

THE PREDICTIVE VALUE OF THE NMP22 BLADDERCHEK TEST FOR BLADDER CARCINOMA IN PATIENTS PRESENTING WITH HAEMATURIA TO A SOUTH AFRICAN TERTIARY CARE CENTRE

Bladder cancer is the second commonest urological malignancy and haematuria is the commonest symptom. Cystoscopy and urine cytology are integral for the investigation of haematuria, while the role of molecular markers such as the NMP22 BladderChek test is still being defined. The BladderChek is a qualitative point of care test developed for the detection of the elevated urinary levels of NMP22 associated with bladder cancer. No studies have been performed in South Africa using the BladderChek nor considered using this test to increase the efficiency of the workup of patients with gross haematuria. The primary aim was to establish the percentage of office cystoscopies done as part of a gross haematuria workup at Charlotte Maxeke Johannesburg Academic Hospital that are unnecessary and may be avoided if the BladderChek is positive under defined conditions. A cross-sectional study of the BladderChek test using prospective consecutive sampling, with special care to limit false positives and negatives, of 64 patients with a history of gross haematuria was conducted. The sensitivity, specificity, positive predictive value and negative predictive value for the BladderChek and the urine cytology were 78.9%, 84.4%, 68.2%, 90.5% and 36.8%, 93.0%, 70.0%, 76.9% respectively. The performance of the BladderChek was not affected by the history of gross haematuria, the stage nor grade of malignancy. Urine cytology detected only one malignancy missed by the BladderChek. Approximately 12.6% of office cystoscopies may be avoided and 78.9% of bladder tumours detected if the BladderChek is selectively applied as in this study. This may “fast-track” patients for transurethral resection of bladder tumour. The BladderChek may be a cost-effective alternative to urine cytology.